$f(x) = 3x^2 - 5$ $g(x) = \frac{4x-2}{2}$ $h(x) = 3(x-3)^2 + 4$ $i(x) = 6x$

$g(x) = 2x - 1$

① Find $h(-2)$ $x = -2$

$h(x) = 3(x-3)^2 + 4$

$h(-2) = 3(-2-3)^2 + 4$

$h(-2) = 3(-5)^2 + 4$

$h(-2) = 3(25) + 4$

$h(-2) = 75 + 4$

$h(-2) = 79$ b)

$(-2, 79)$

x y

④ $i(x) = 18$ $y = 18$

$i(x) = 6x$

$\frac{18}{6} = \frac{6x}{6}$

$3 = x$ b)

$(3, 18)$

x y

⑤ $h(x) = 151$

$h(x) = 3(x-3)^2 + 4$

$151 = 3(x-3)^2 + 4$

$151 - 4 = 3(x-3)^2$

$\frac{147}{3} = \frac{3(x-3)^2}{3}$

$\sqrt{49} = \sqrt{(x-3)^2}$

$7 = x - 3$

$7 + 3 = x$

$10 = x$ a)

Assignment

Answers:

① b)
② a)
③ c)
④ b)
⑤ a)
⑥ d)
⑦ c)
⑧ a)

① $f(6) = 103$
② $g(6) - i(4) = -13$
③ $x = 9$

a) Non Function
D: $\{x \mid x \geq -6, x \in R\}$
R: $\{y \mid y \leq 4, y \in R\}$

b) Function
D: $\{x \mid x \in R\}$
R: $\{y \mid y \geq -4, y \in R\}$

Review Sheet

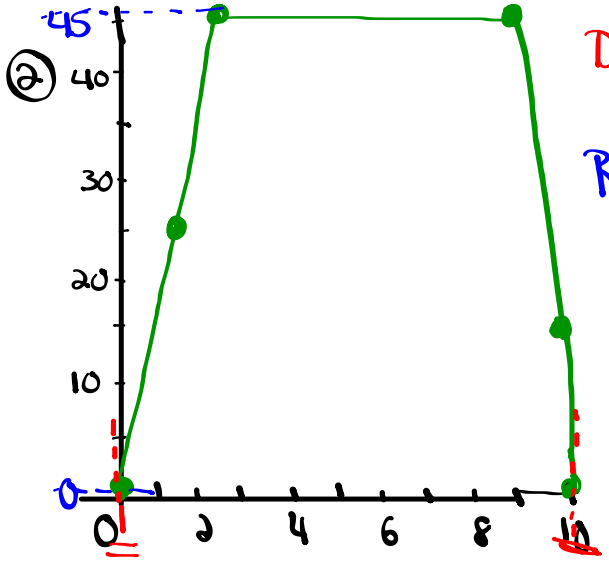
① Identify the domain, range, and if each is a function or non-function.

a) $\{(0,0), (5,1), (10,2), (15,3), (20,4)\}$

Domain: $\{0, 5, 10, 15, 20\}$

Range: $\{0, 1, 2, 3, 4\}$

It is a function because the x-values do not repeat

② 

D: $\{x \mid 0 \leq x \leq 10, x \in R\}$

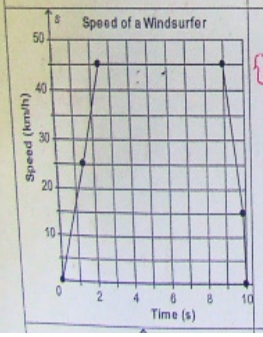
R: $\{y \mid 0 \leq y \leq 45, y \in R\}$

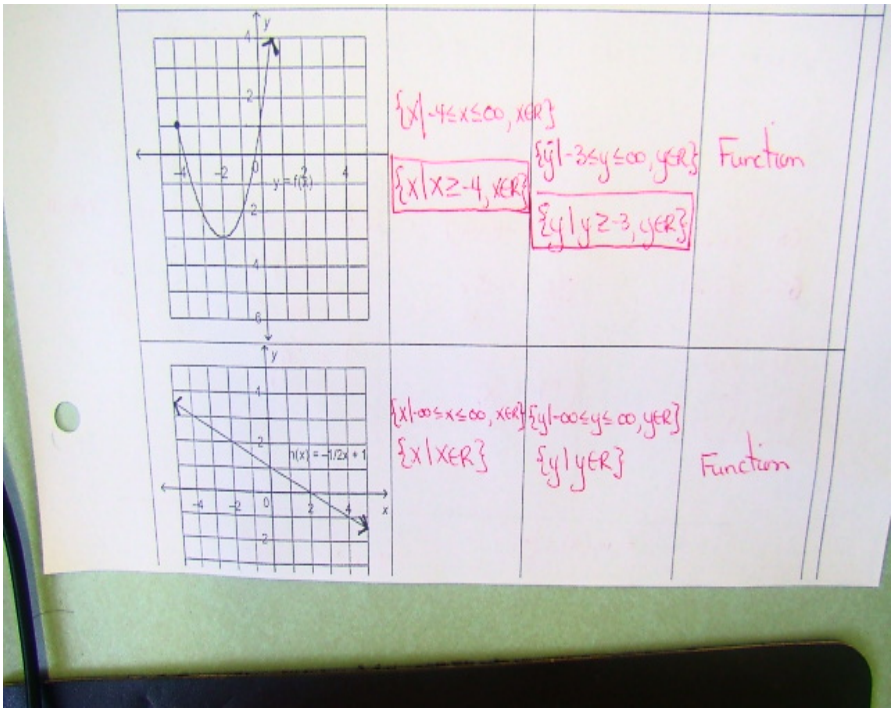
Function

1. Identify the domain, range and if each is a function or non-function?

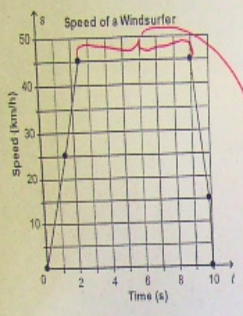
F a) {(0,0), (5,1), (10,2), (15, 3), (20,4)} D: {0,5,10,15,20} R: {0,1,2,3,4}
NF b) {(0,3), (0,1), (1,2), (2, 3), (4,4)} D: {0,1,2,4} R: {3,1,2,4}
F c) {(0,5), (5,6), (1,2), (7, 9), (15,4)} D: {0,5,1,7,15} R: {5,6,2,9,4}
F d) {(0,6), (8,1), (10,1), (15, 3), (20,4)} D: {0,8,10,15,20} R: {6,1,3,4}
NF e) {(10,8), (16,4), (12,7), (10, 3), (19,6)} D: {10,16,12,19} R: {8,4,7,3,6}

2. Complete the chart:

Relation	Domain	Range	Function /Nonfunction
	$\{x \mid 0 \le x \le 10, x \in R\}$	$\{y \mid 0 \le y \le 45, y \in R\}$	Function


y
x
y = f(x)
{x|-4≤x≤∞, x∈R}
{x|x≥-4, x∈R}
{y|-3≤y≤∞, y∈R}
{y|y≥-3, y∈R}
Function
{x|-∞≤x≤∞, x∈R}
{x|x∈R}
{y|-∞≤y≤∞, y∈R}
{y|y∈R}
Function

3. This graph shows the speed of a windsurfer, s, as a function of time, t.

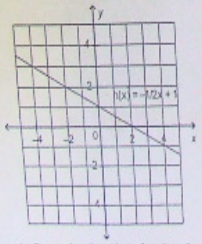


a) How long did the wipdsurfing last? 10 seconds

b) How long was the windsurfer's speed 45km/h? (3.5s - 9s)

6.5 seconds

4. This is a graph of the function



$h(x) = -\frac{1}{2}x + 1$

a) $h(-2) = -\frac{1}{2}(-2) + 1$

$= +1 + 1$

$= 2$

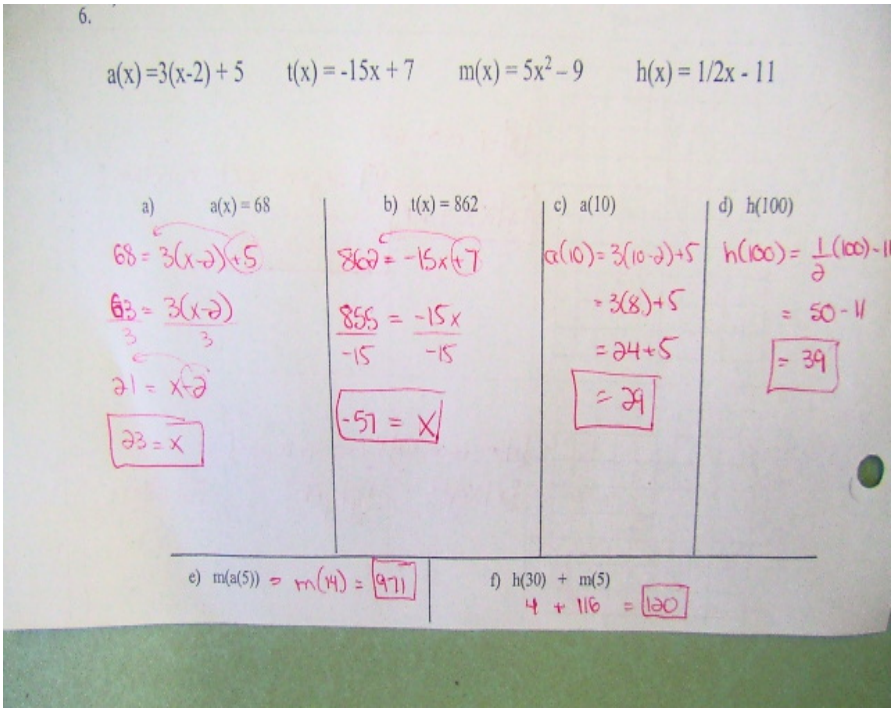
b) $-1 = -\frac{1}{2}x + 1$

$-2 = -\frac{1}{2}x$

$4 = x$

a) Determine the value of y when the x value is -2.

b) Determine the value of x when the y value is -1.


6.
a(x) =3(x-2) + 5
t(x) = -15x + 7
m(x) = 5x² – 9
h(x) = 1/2x - 11
a) a(x) = 68
68 = 3(x-2)+5
63 = 3(x-2)
3 3
21 = x-2
23 = x
b) t(x) = 862
862 = -15x+7
855 = -15x
-15 -15
-57 = x
c) a(10)
a(10) = 3(10-2)+5
= 3(8)+5
= 24+5
= 29
d) h(100)
h(100) = 1/2(100)-11
= 50 - 11
= 39
e) m(a(5)) = m(14) = 971
f) h(30) + m(5)
4 + 116 = 120